IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of   :

Masahiro HONJO   :   Attn: APPLICATION BRANCH

Serial No. NEW   :   Docket No. 2001-1710A

Filed November 15, 2001   :

METHOD AND APPARATUS FOR
RECORDING/REPRODUCTION

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents,
      Washington, DC 20231

Sir:

Prior to examination of the above-referenced U.S. patent application please amend the application as follows:

IN THE CLAIMS

Please amend the claims as follows:

10.   (Amended) The recording/reproduction method of Claim 8 wherein the decoded signal corresponding to the first MPEG data is a high-definition signal and the signal which is generated by converting the resolution of the decoded signal is a standard signal.

13.   (Amended) The recording/reproduction method of Claim 1 including:

a coding step of coding a video signal by an MPEG coding system to create video data and simultaneously coding an audio signal to create audio data;

a multiplexing step of multiplexing the audio data and the video data to generate the first MPEG data; and

a preprocessing recording step of recording the first MPEG data on the first recording medium.

14.   (Amended) The recording/reproduction method of Claim 1 wherein

in the information addition step, the positional information indicating the positions of the previous and subsequent data groups of the specific data group with respect to said specific data group is added in the vicinity of the head of said specific data group.

15.   (Amended) The recording/reproduction method of Claim 1 wherein

in the reading step, the first MPEG data is read at a speed which is higher than a real time reproduction speed at which the first MPEG data is normally decoded and displayed, and

in the recording step, the second MPEG data is written on the second recording medium at a speed which is higher than a real time reproduction speed at which the second MPEG data is normally decoded and displayed.

16.   (Amended) The recording/reproduction method of Claim 2 wherein

in the decoding step, only video data included in the first MPEG data is decoded to generate a decoded video signal;

in the re-encoding step, the decoded video signal is re-encoded to generate re-encoded video data, and the re-encoded video data is multiplexed with delayed audio data which is obtained by delaying audio data included in the first MPEG data, thereby generating multiplexed data; and

in the recording step, the multiplexed data is recorded as the second MPEG data.

17.   (Amended) The recording/reproduction method of Claim 2 wherein

in the re-encoding step,

one of data processings:

a data insertion processing for inserting external audio data which is obtained by coding an audio signal from outside, into the second MPEG data;

a data replacement processing for replacing the external audio data with audio data in the second MPEG data; and

a data composition processing for composing the external audio data with the audio data in the second MPEG data, is performed.

18.   (Amended) The recording/reproduction method of Claim 1 wherein the MPEG data is coded data which conforms to any of MPEG1, MPEG2, MPEG4, and MPEG7 standards.

19.   (Amended) The recording/reproduction method of Claim 1 wherein the first and second MPEG data are transport streams or program streams.

20.   (Amended) The recording/reproduction method of Claim 1 wherein the data group is composed of one or plural GOPs each being an access unit at reproduction.

21.   (Amended) The recording/reproduction method of Claim 1 wherein the first and second recording media are any of a hard disk, an optical disk, a magneto-optical disk, a semiconductor memory, and a magnetic tape.

22.   (Amended) The recording/reproduction method of Claim 1 wherein the first and second recording media are one and the same data recording medium.

Please add the following new claims:

36.   The recording/reproduction method of Claim 9 wherein the decoded signal corresponding to the first MPEG data is a high-definition signal and the signal which is generated by converting the resolution of the decoded signal is a standard signal.

37.   The recording/reproduction method of Claim 2 including:

a coding step of coding a video signal by an MPEG coding system to create video data and simultaneously coding an audio signal to create audio data;

a multiplexing step of multiplexing the audio data and the video data to generate the first MPEG data; and

a preprocessing recording step of recording the first MPEG data on the first recording medium.

38. The recording/reproduction method of Claim 3 including:

a coding step of coding a video signal by an MPEG coding system to create video data and simultaneously coding an audio signal to create audio data;

a multiplexing step of multiplexing the audio data and the video data to generate the first MPEG data; and

a preprocessing recording step of recording the first MPEG data on the first recording medium.

39. The recording/reproduction method of Claim 3 wherein

in the information addition step, the positional information indicating the positions of the previous and subsequent data groups of the specific data group with respect to said specific data group is added in the vicinity of the head of said specific data group.

40. The recording/reproduction method of Claim 12 wherein

in the information addition step, the positional information indicating the positions of the previous and subsequent data groups of the specific data group with respect to said specific data group is added in the vicinity of the head of said specific data group.

41. The recording/reproduction method of Claim 2 wherein

in the reading step, the first MPEG data is read at a speed which is higher than a real time reproduction speed at which the first MPEG data is normally decoded and displayed, and

in the recording step, the second MPEG data is written on the second recording medium at a speed which is higher than a real time reproduction speed at which the second MPEG data is normally decoded and displayed.

42. The recording/reproduction method of Claim 3 wherein
in the reading step, the first MPEG data is read at a speed which is higher than a real time reproduction speed at which the first MPEG data is normally decoded and displayed, and

in the recording step, the second MPEG data is written on the second recording medium at a speed which is higher than a real time reproduction speed at which the second MPEG data is normally decoded and displayed.

43. The recording/reproduction method of Claim 12 wherein
in the reading step, the first MPEG data is read at a speed which is higher than a real time reproduction speed at which the first MPEG data is normally decoded and displayed, and

in the recording step, the second MPEG data is written on the second recording medium at a speed which is higher than a real time reproduction speed at which the second MPEG data is normally decoded and displayed.

44. The recording/reproduction method of Claim 3 wherein
in the decoding step, only video data included in the first MPEG data is decoded to generate a decoded video signal;

in the re-encoding step, the decoded video signal is re-encoded to generate re-encoded video data, and the re-encoded video data is multiplexed with delayed audio data which is obtained by delaying audio data included in the first MPEG data, thereby generating multiplexed data; and

in the recording step, the multiplexed data is recorded as the second MPEG data.

45. The recording/reproduction method of Claim 3 wherein

in the re-encoding step,

one of data processings:

a data insertion processing for inserting external audio data which is obtained by coding an audio signal from outside, into the second MPEG data;

a data replacement processing for replacing the external audio data with audio data in the second MPEG data; and

a data composition processing for composing the external audio data with the audio data in the second MPEG data, is performed.

46.   The recording/reproduction method of Claim 2 wherein

the MPEG data is coded data which conforms to any of MPEG1, MPEG2, MPEG4, and MPEG7 standards.

47.   The recording/reproduction method of Claim 3 wherein

the MPEG data is coded data which conforms to any of MPEG1, MPEG2, MPEG4, and MPEG7 standards.

48.   The recording/reproduction method of Claim 12 wherein

the MPEG data is coded data which conforms to any of MPEG1, MPEG2, MPEG4, and MPEG7 standards.

49.   The recording/reproduction method of Claim 2 wherein

the first and second MPEG data are transport streams or program streams.

50.   The recording/reproduction method of Claim 3 wherein

the first and second MPEG data are transport streams or program streams.

51.   The recording/reproduction method of Claim 12 wherein

the first and second MPEG data are transport streams or program streams.

52. The recording/reproduction method of Claim 2 wherein

the data group is composed of one or plural GOPs each being an access unit at reproduction.

53. The recording/reproduction method of Claim 3 wherein

the data group is composed of one or plural GOPs each being an access unit at reproduction.

54. The recording/reproduction method of Claim 12 wherein

the data group is composed of one or plural GOPs each being an access unit at reproduction.

55. The recording/reproduction method of Claim 2 wherein

the first and second recording media are any of a hard disk, an optical disk, a magneto-optical disk, a semiconductor memory, and a magnetic tape.

56. The recording/reproduction method of Claim 3 wherein

the first and second recording media are any of a hard disk, an optical disk, a magneto-optical disk, a semiconductor memory, and a magnetic tape.

57. The recording/reproduction method of Claim 12 wherein

the first and second recording media are any of a hard disk, an optical disk, a magneto-optical disk, a semiconductor memory, and a magnetic tape.

58. The recording/reproduction method of Claim 2 wherein

the first and second recording media are one and the same data recording medium.

59.   The recording/reproduction method of Claim 3 wherein
the first and second recording media are one and the same data recording medium.

60.   The recording/reproduction method of Claim 12 wherein
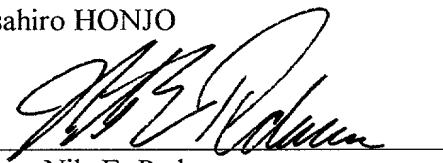the first and second recording media are one and the same data recording medium.

REMARKS

The present Preliminary Amendment is submitted to delete the multiple dependency of the claims, thereby placing such claims in condition for examination and reducing the required PTO filing fee.

Attached hereto is a marked-up version of the changes made to the claims by the current Preliminary Amendment. The attached page is captioned "**Version With Markings to Show Changes Made**".

Respectfully submitted,

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MPEG data.

9.   The recording/reproduction method of Claim 3 wherein

the re-encoding step includes: a conversion step of

converting a decoded signal having a prescribed resolution,

corresponding to the first MPEG data, into a signal having a

resolution which is lower than the prescribed resolution; and a

step of re-encoding the converted signal to generate the second

MPEG data.

10.   The recording/reproduction method of Claim 8 [or 9] wherein

the decoded signal corresponding to the first MPEG data is

a high-definition signal and the signal which is generated by

converting the resolution of the decoded signal is a standard

signal.

11.   The recording/reproduction method of Claim 9 wherein

the information obtaining step includes:

a step of recording the second MPEG data on a third recording

medium;

a step of reading the second MPEG data from the third

recording medium; and

a step of obtaining positional information which indicates

positions of previous and subsequent data groups of a specific

data group in the read second MPEG data with respect to said

specific data group, on the basis of the second MPEG data.

12.   A recording/reproduction method by which MPEG data that is
obtained by coding a video signal by an MPEG coding system and
is divided taking a given data unit as one data group is
recorded/reproduced, comprising:

a storage step of storing first MPEG data corresponding to
one or more data groups in a data storage unit;

a reading step of reading the first MPEG data from the data
storage unit;

an information obtaining step of obtaining positional
information which indicates positions of previous and subsequent
data groups of a specific data group in the read first MPEG data
with respect to the specific data group, on the basis of the first
MPEG data;

an information addition step of adding the positional
information at a determined position in the first MPEG data, to
generate second MPEG data; and

a recording step of recording the second MPEG data on a second
recording medium.

Claim 1

13.   The recording/reproduction method of ∧any of Claims 1, 2 and
3⌋ including:

a coding step of coding a video signal by an MPEG coding
system to create video data and simultaneously coding an audio

signal to create audio data;

a multiplexing step of multiplexing the audio data and the video data to generate the first MPEG data; and

a preprocessing recording step of recording the first MPEG data on the first recording medium.

Claim 1

14.   The recording/reproduction method of any of Claims 1, 3 and 12 wherein

in the information addition step, the positional information indicating the positions of the previous and subsequent data groups of the specific data group with respect to said specific data group is added in the vicinity of the head of said specific data group.

Claim 1

15.   The recording/reproduction method of any of Claims 1, 2, 3 and 12 wherein

in the reading step, the first MPEG data is read at a speed which is higher than a real time reproduction speed at which the first MPEG data is normally decoded and displayed, and

in the recording step, the second MPEG data is written on the second recording medium at a speed which is higher than a real time reproduction speed at which the second MPEG data is normally decoded and displayed.

16.   The recording/reproduction method of Claim 2 or 3 wherein

in the decoding step, only video data included in the first MPEG data is decoded to generate a decoded video signal;

in the re-encoding step, the decoded video signal is re-encoded to generate re-encoded video data, and the re-encoded video data is multiplexed with delayed audio data which is obtained by delaying audio data included in the first MPEG data, thereby generating multiplexed data; and

in the recording step, the multiplexed data is recorded as the second MPEG data.

17. The recording/reproduction method of Claim 2 [or 3] wherein

in the re-encoding step,

one of data processings:

a data insertion processing for inserting external audio data which is obtained by coding an audio signal from outside, into the second MPEG data;

a data replacement processing for replacing the external audio data with audio data in the second MPEG data; and

a data composition processing for composing the external audio data with the audio data in the second MPEG data, is performed.

18. The recording/reproduction method of Claim 1 any of Claims 1, 2, 3 and 12] wherein

the MPEG data is coded data which conforms to any of MPEG1,

MPEG2, MPEG4, and MPEG7 standards.

19.   The recording/reproduction method of any of Claims 1, 2 and 3 wherein

the first and second MPEG data are transport streams or program streams.

20.   The recording/reproduction method of any of Claims 1, 2, 3 and 12 wherein

the data group is composed of one or plural GOPs each being an access unit at reproduction.

21.   The recording/reproduction method of any of Claims 1, 2, 3 and 12 wherein

the first and second recording media are any of a hard disk, an optical disk, a magneto-optical disk, a semiconductor memory, and a magnetic tape.

22.   The recording/reproduction method of any of Claims 1, 2, 3 and 12 wherein

the first and second recording media are one and the same data recording medium.

23.   A recording/reproduction apparatus which read data from a first recording medium containing first MPEG data which is divided